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Research trends in language industries in AESLA's translation and interpretation panel

Miguel Ángel Candel-Mora[a]*, Tamara Rubio Donat[a]

[a]*Universitat Politènica de València, Camino de Vera, Valencia 46022, Spain*

Abstract

As a result of the widespread use of computer applications after years of research in the field of natural language processing, language technologies and machine translation, the notion of language industries consolidates in the professional translation sector from the standpoint of the increase in performance and efficiency while reducing costs, improving quality and automating processes.

This work studies the trends of the approach to translation technologies by means of systematic content analysis techniques of the scientific production of AESLA conferences during the 2004-2012 period to identify themes, applications and connections with the world of professional translation and technology.

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Keywords: language industry; content analysis; language technology; translation; .

Introduction

The concept of language industries has been in use for the last 30 years following the widespread use of applications arising after years of research in natural language processing, speech recognition and synthesis, and machine translation, among others (Vidal, 1991; Hutchins, 1998; Bowker, 2002). However, during the last years it can be seen a greater participation from the academia in the scientific production in this field.

The aim of this paper is to investigate the evolution of the study of technologies applied to translation, from the point of view of publications in the academic environment and its relationship with the professional world, in order

* Corresponding author. Tel.: +34 96 3877000 ext. 75341.
E-mail address: mcandel@upvnet.upv.es

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to observe its evolution and trends, more specifically from the contributions presented at the panel of Translation and Interpretation of the congresses of the Spanish Association of Applied Linguistics (AESLA) during the 2004-2012 period to identify themes, applications and connections.

In order to achieve this, objective and systematic content analysis research techniques are used (Krippendorff, 2004), both quantitative, using statistics based on counting the smallest units of analysis, and qualitative, by categorizing these units under certain criteria.

The fields dealt with by language industries range from natural language processing, language technologies, the development of language resources, technologies for language processing applied to content extraction, indexing systems, or machine translation, to name a few. According to Vidal (1991, p. 13) the use of language technologies in translation is the result of the passage from an individualized and artisan practice to an industrial behavior.

Therefore, throughout this paper, language industries refer specifically to the environment of professional translation, mainly computer assisted translation, machine translation, and the creation of resources to exploit both technologies (Hutchins, 1998).

It should be noted that the objective of the use of technology in the professional translation environment lies in the increase of performance and efficiency while reducing costs, improving quality and automating processes (Bowker, 2002; Quah, 2006).

Methodology

AESLA was founded in 1982 with the aim to promote and encourage applied linguistics study and research in Spain. Translation is present in AESLA since the beginning of the association: back in the First National Conference of AESLA in 1983 there was already a scientific panel called *Theory and practice of translation*, in which 5 contributions were presented, and since then, there has always been participation on translation at AESLA conferences. However, it is not until the 5th National Conference in 1987, when the first participation on translation technology appears.

The methodology used for this study consisted in using content analysis techniques (Krippendorff, 2004) to perform quantitative and qualitative analysis based on a textual corpus made up of the proceedings of the AESLA conferences from 2004 to 2012.

Upon locating the electronic versions of these proceedings, the next step was to classify the contributions by panel and year of publication, up to a total of 1154 contributions. Finally, special attention was given to the translation and interpretation panel to identify the contributions related to the use of language technologies: 20 contributions were selected.

During the first stage, data were combined and contrasted with the rest of contributions in translation to the AESLA Conference. With the 20 contributions selected from the translation and interpretation panel that use technologies, a subset was created aimed at a more detailed analysis by line of research and specialization in order to observe standard patterns. Finally, a qualitative analysis from the study of keywords and content analysis techniques was performed.

3. Analysis and discussion

Figures 1 to 6 correspond to the quantitative study which highlights the absolute number of contributions analyzed and their contrast with the total amount of contributions; while figures 7 through 9 illustrate the results of a qualitative study carried out by means of content analysis techniques focused on the theme, specialization and research areas addressed in each of the contributions analyzed and their comparative study.

3.1. Papers published in AESLA Proceedings: 2004-2012

The total number of articles published in each conference annually, from 2004 to 2012 is shown below (Figure 1). There is an ascending trend from 2004 to 2007 with a peak in 2007 and the largest number of contributions (180). However, in the second half of the period, from 2008 to 2012, there is a downward trend, with the smallest number of contributions in 2012 (78).

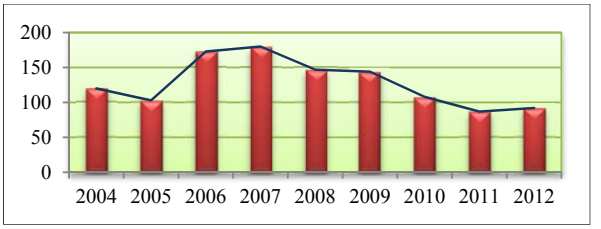


Figure 1. Papers published in AESLA Proceedings: 2004-2012.

3.2. Papers published in the Translation and Interpretation panel in AESLA proceedings from 2004-2012

As shown in Figure 2, the T&I panel had a small number of contributions during the first two years analyzed, but in 2006 this number increased significantly: this year had the highest number of contributions to the T&I panel. After 2006, there is a trend towards stability, peaking in 2009 with 21 contributions and in 2007, with 16. In the last two years, it can be seen a stable trend in the number of contributions to the panel of T&I.

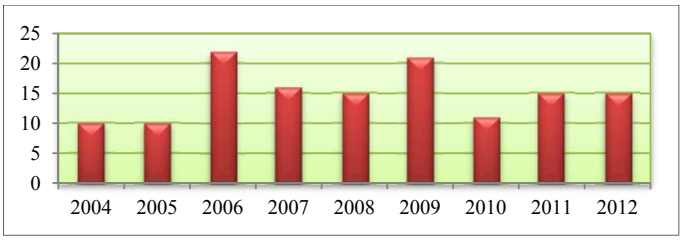


Figure 2. Papers published in the Translation and Interpretation panel in AESLA proceedings from 2004-2012.

3.3. Contributions to the T&I panel compared with the total number of contributions AESLA 2004-2012

Figure 3 shows the comparative evolution of the total number of papers in the different panels in AESLA congresses with the total number of papers in the T&I panel in each of the annual conferences. It can be seen that when the total number of papers in the other panels increases, the number of papers in the T&I panel also increases (except in 2007) and when the former decreases, the T&I panel also decreases (except in 2009).

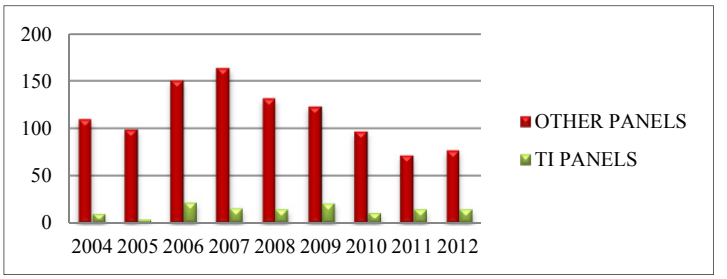


Figure 3. Contributions to T&I panel compared with the total number of contributions AESLA 2004-2012.

3.4. Comparison of language industries production vs. T&I panel and total papers of AESLA 2004-2012

The discipline of translation and interpretation has been consolidating over the last decade: taking into consideration that there are 10 scientific panels that repeat in all the conferences, 11% of the contributions correspond to the panel of Translation and Interpretation. Still, only 1.6% of the T&I papers focus on language industries or language technology applied to translation.

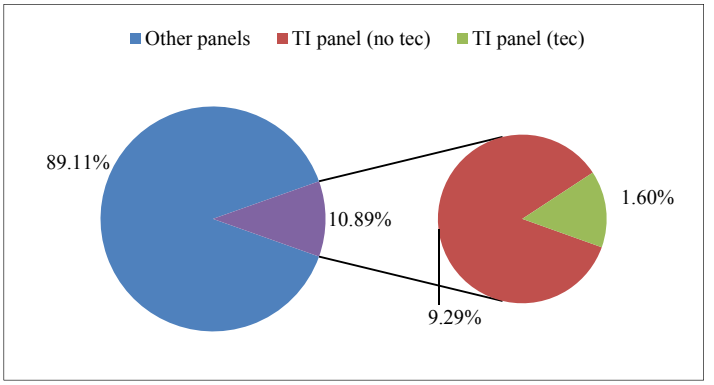
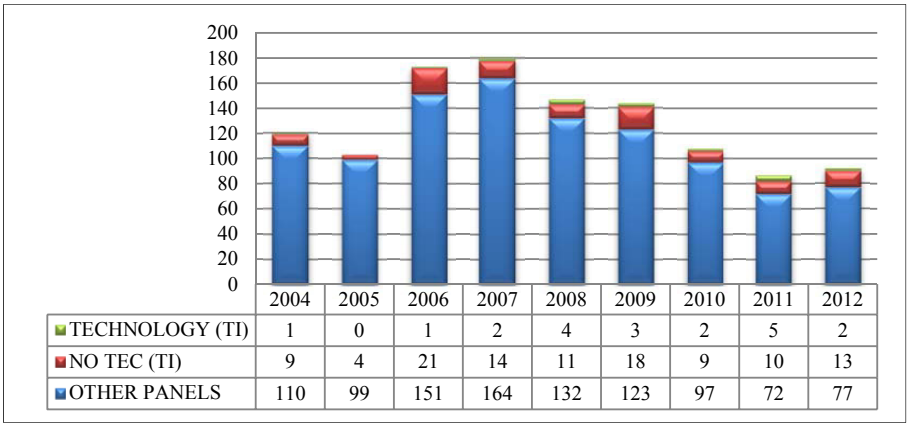


Figure 4. Comparison of language industries production vs. T&I panel and total papers of AESLA 2004-2012.

3.5. Compared trend of the contributions of language industries with respect to T&I panel and total AESLA 2002-2012

As it can be seen in Figure 5 below, in this comparison between the contributions to the T&I panel regarding technology applied to translation, contributions to the T&I panel not related to technology applied to translation and contributions to the other panels of the conference, the weight of research on language industries is still very low compared to other research topics. Only in 2008 and 2010 it can be noted that these investigations had a significant presence within the T&I panel.



	2004	2005	2006	2007	2008	2009	2010	2011	2012
TECHNOLOGY (TI)	1	0	1	2	4	3	2	5	2
NO TEC (TI)	9	4	21	14	11	18	9	10	13
OTHER PANELS	110	99	151	164	132	123	97	72	77

Figure 5. Compared trend of the contributions of language industries with respect to T&I panel and total AESLA 2004-2012.

The following figures (6-9) represent the qualitative analysis performed. These analyses were carried out using only the data from the contributions to the Translation and Interpretation panel.

3.6. Research lines of the contributions to the T&I panel

The distribution of the research lines identified in the papers published in the T&I panels is represented in Figure 6, with a total of 129 contributions. The lines of research have been categorized into *teaching*, *translation theory* and *professional application*.

As it can be seen, the line of research that prevails (73%) in this panel is aimed at theory of translation, while research aimed at teaching and professional applications has approximately the same weight in the overall calculation, 13% and 14% respectively.

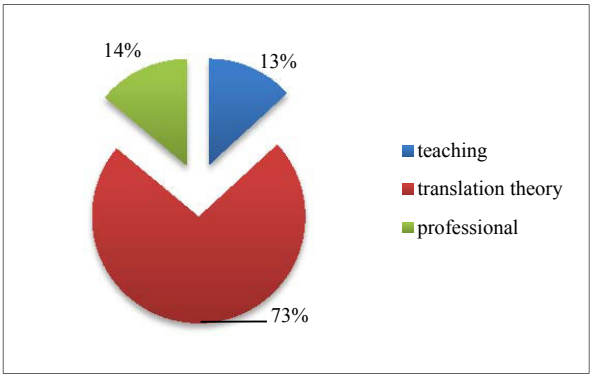


Figure 6. Research lines of the contributions to the T&I panel.

3.7. Research lines of the contributions to the T&I panel related to the use of technology

The trend in the research lines of these studies to the panel of IT is comparable to the results of the total of contributions as shown in Figure 6 above, that is, research on translation theory remains predominant, although it can be seen a slightly higher percentage in translator training research. Figure 7 represents the sample of the contributions to the panel of T&I that use technology, with a total of 20 contributions under analysis.

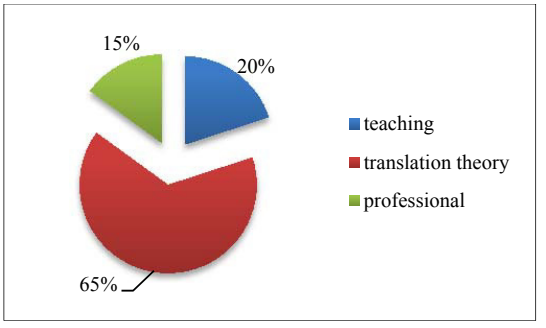


Figure 7. Research lines of the contributions to the T&I panel related to the use of technology.

3.8. Translation specialization of the contributions to the T&I panel

The chart below (Figure 8) presents the different translation specializations of the contributions of the T&I panel. These have been categorized into the common classifications established in the professional context: *literary, audiovisual, technical, medical, legal, general, public services* and *interpretation*. As illustrated, the incidence of general translation, followed by literary translation is remarkable.

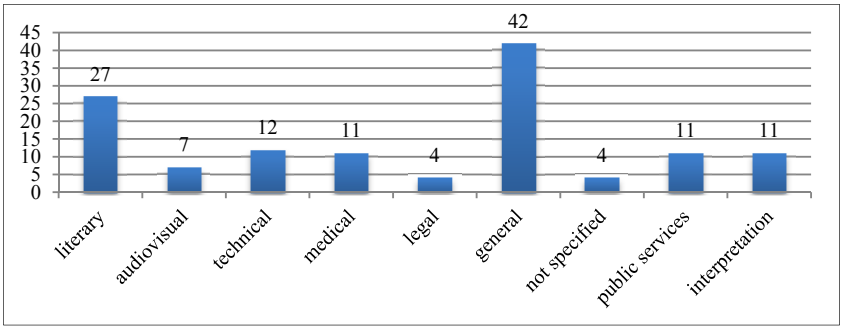


Figure 8. Translation specialization of the contributions to the T&I panel.

3.9. Translation specialization of the contributions to the T&I panel related to the use of technology

Similarly, when the analysis is performed with the subset of contributions to the panel of T&I that use technology, it can be seen (Figure 9) that the prevailing translation specialization is General Translation, but it should be noted that literary translation loses relative weight compared to audiovisual translation and interpretation.

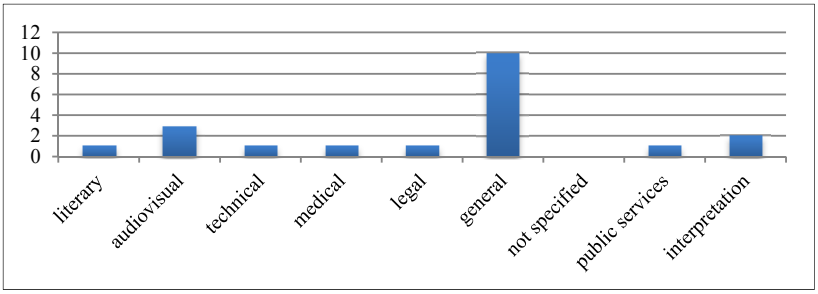


Figure 9. Translation specialization of the contributions to the T&I panel related to the use of technology.

3.10. Qualitative content analysis

For the qualitative content analysis focused on the sample of 20 contributions to the T&I panel that use technology, the first step was the extraction of keywords in order to observe patterns that might shed some light on the use of translation technology. A total of 110 keywords were extracted from the abstracts and titles.

A total of ten terms from the information technology domain were identified: *online resource*, *open system*, *wiki tools*, *database compilation*, *interface*, *IT*, *digitalization*, *collaborative work webquest*, and *software*. Although they are specific terms of the IT domain, it should be noted that they are relatively basic and general.

Another interesting observation is the large amount of terms from the language teaching and general teaching domain. A total of 12 instances were identified, some of them specifically related to language teaching and learning such as *self learning*, *language learning*, *adapted speech*, *multimedia language teaching materials,* while the others refer to the general teaching domain, *lack of specific training*, *teaching* (x2), *materials development*, *needs* (x3), *curricula*, *training plans*, *study programs*.

It is also remarkable that there are only 4 references to machine translation, all of them found in two contributions, especially because due to recent advances in statistical machine translation, research in this technology seems to be experiencing a boom. The terms identified are *machine translation system*, *automatic translation*, *BLEU system*, *machine translator*, *open source machine translation system.*

ISO or national standards are a recurrent reference in the field of professional translation; however, only 2 contributions make reference to them: *UNE standards* and *professional standards*.

One of the main lines of work in terms of technology applied to translation is the design and development of tools and resources to support the translator (Hutchins, 1998; Quah, 2006). However, the sample analyzed reveals that only one work refers to resources for translators (*bilingual resources creation* and *online resources for translators*) and although there are 4 references to tools, there is no specific mention to the translation process, as the following terms reveal: *tools*, *wiki tools*, *technological tools,* and *language learning tools.*

For over 20 years now, language industries in translation have been also related to the concept of localization. The keyword content analysis carried out reveals the lack of practical work on this subject: only one paper makes direct reference to the concept of localization.

4. Conclusions

The analysis and discussion of the data collected for this study, reveal that although the contributions to the translation and interpretation panel is comparable to that of other panels, with regards to language industries in translation and despite a history of 25 years and the consolidation of language technologies for translation, only 20 of the total of 1154 contributions published in period studied deal with this topic.

The professional and teaching approaches have approximately the same number of contributions (18 and 17 respectively), while studies oriented to the theory of translation add up to a total of 94 contributions, which seems to suggest a gap in the interest in teaching/professional applications.

Finally, it is also remarkable the lack of studies on current issues in the field of translation and localization, audiovisual translation and the use of computer-assisted translation.

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